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July 27, 2015

Mr. Christopher Grundler
Director, Office of Transportation and Air Quality
United States Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 6401A
Washington, DC 20460

Email: Grundler.Christopher@Epa.gov

RE: Renewable Fuel Standard Program: Standards for 2014, 2015 and 2016 and Biomass-Based Diesel Volumes for 2017. 80 Fed. Reg. 33100 (June 10, 2015); EPA-HQ-OAR-2015-0111.

Dear Mr. Grundler:

Shell appreciates the opportunity to comment on the proposed 2014, 2015 and 2016 Renewable Fuel Standards and Biomass-Based Diesel Volumes for 2017. Shell is an obligated party under the Renewable Fuel Standard (RFS) program. We are also a renewable fuel producer through a joint venture, and we continue to work on the commercialization of cellulosic renewable fuels. As such, we have a keen interest in these issues. In order to preserve the RFS program long term (which of itself will provide certainty for investors in cellulosic renewable fuels), it is necessary for EPA to act to address the blendwall problem before it has significant adverse impacts on consumers and the economy. These comments represent the views of Shell Oil Products US, Shell Trading Company US, Shell Chemical LP, Deer Park Refining Limited Partnership, and Motiva Enterprises LLC. We submitted comments to the Agency previously on January 28, 2014 with regard to the 2014 RFS standard (EPA-HQ-OAR-2013-0479) and ask that you incorporate those comments by reference here.

In general, we support EPA's proposal regarding 2014, 2015 and 2016 standards, with the exception of the proposed biomass-based diesel volumes. EPA is correct to recognize that the blendwall is upon us and at this time there is no feasible scenario to meet the renewable fuel volume mandates specified by the Energy Independence and Security Act. Consequently, EPA is correct to use its waiver authority to reduce the mandates to achievable levels consistent with

the capabilities of infrastructure and vehicles. It is our view that it is better to preserve the RFS, than risk its demise through infeasible targets. Alternative measures, such as the USDA program for blender pump infrastructure need to be given time to have effect. Such an approach has more opportunity to provide a structure for more future investment certainty for cellulosic renewable fuel production. Failure to do so would likely result in limitations on the supply of gasoline and diesel fuels in the United States and severe adverse impacts on consumers and the economy, since obligated parties cannot operate in violation of the law.

EPA should act expeditiously to finalize the adjusted standards. The deadlines for issuing the 2014 and 2015 standards have long passed. Continued delay in the issuance of the standards creates uncertainty that adversely impacts the market. We urge EPA to quickly issue the adjusted standards to provide the market certainty.

Below, we discuss the blendwall, EPA's general approach toward the statute's implementation, EPA's authority to adjust the renewable fuel standards, EPA's correct decision to not attempt to deplete banked RINs when setting the standards, EPA's lack of authority to increase the stringency of the biomass-based diesel volumes until at least 2017, and the upcoming mandate reset rulemaking.

The Blendwall

As we have explained in previous comments to the Agency, the blendwall is this:

- The amount of gasoline and diesel fuel that refiners and importers can legally produce or import for U.S. consumption is limited by their ability to meet the Renewable Volume Obligation (RVOs) that are incurred by supplying such fuel.
- Refiners and importers comply with the RVOs by acquiring the required number of RINs as determined by the annual Renewable Fuel Standards and the amount of gasoline and diesel that they supply for US consumption. This is each obligated party's individual RVO.
- The number of RINs available for compliance depends on consumption of renewable fuels in the U.S. transportation system (not the production of biofuels). Consumer choice and supply infrastructure are essential factors.
- Therefore, the supply of gasoline and diesel fuel for US consumption is limited by the consumption of renewable fuels in US transportation fuels. This can be described by the following simple equation derived from the law and EPA's regulations:

$$\text{Gasoline and diesel supplied for US consumption} = = \frac{\text{Renewable fuel consumed}}{\text{Annual RFS \% standard}}$$

- As the RFS2 mandates exceed the ability of the U.S. transportation system to consume the renewable fuel (due to vehicle and retail infrastructure compatibility issues), RINs will be in short supply, which to maintain compliance with the law, will in turn limit supplies of gasoline and diesel for U.S. consumption. Consumption of E85, E15, or biodiesel will not provide the needed RINs– the blendwall is here now. Increasing consumption of those fuels requires significant investments in blending and dispensing infrastructure.
- The RIN construct was expected to financially support ever increasing renewable fuel volumes, but:
    - RIN prices are often discussed as a means to create incentives for retailers to invest in infrastructure to offer E85 and other higher ethanol blends. While it is true, we believe, that if RIN prices stay high enough, long enough, that might cause some expansion of E85 availability by enticing retailers (97% of which are independently owned and operated) to invest in new infrastructure, it is important to keep in mind that there is a time element to this which could result in RIN shortage that limits gasoline and diesel supply and otherwise adversely affects consumers and the economy in the interim.
- RIN deficit rollover is not a solution. Whenever a deficit is carried forward, the obligated party is required to clear the deficit and fully meet the RVO in the second year. This is an unsustainable solution as the RFS mandates continue to escalate.
- Knowingly violating the Clean Air Act is not an option. The adverse impacts of the blendwall limitation will be the result of obligated parties taking action to remain in compliance with a law that becomes infeasible when mandates exceed the blendwall.

EPA correctly recognizes that the blendwall has been reached and proposes to take action to adjust the standards to attempt to put the RFS on a manageable path forward and to avoid the potentially disastrous consequences for consumers and the entire US economy. We generally support EPA's action to address this serious problem. Adjusting the standards to alleviate the blendwall problem is critical to the well-being of US consumers, the economy, and the continued existence of the RFS.

EPA Has Authority Under the Cellulosic Waiver Provision and the General Waiver Provision to Adjust the RFS Standards

EPA proposes to revise the standards using its authority under the cellulosic waiver provision and the general waiver provision. We agree that EPA has authority to adjust the advanced and general renewable fuel categories when adjusting the cellulosic category. EPA is also correct to read the cellulosic waiver provision and the general waiver provision together in a complementary way to give meaning to both. There is nothing in the law that suggests that

Congress intended one to limit the other. We agree that EPA has authority to go beyond its ability to waive the standards using the cellulosic waiver provision by relying on the general waiver provision.

The general waiver provision authorizes EPA to adjust any of the RFS standards in whole, or in part, in the event of severe economic or environmental harm or inadequate domestic supply. EPA proposes to rely on the "inadequate domestic supply" provision. As discussed below, we agree that EPA has authority to adjust the standards on the basis of inadequate domestic supply, but also believe that EPA would be fully justified relying on its authority to avoid severe economic harm as well. If EPA does not adjust the standards, the blendwall will result in severe economic harm throughout the United States.

EPA's interpretation of the general waiver provision is entirely reasonable. Notwithstanding widespread misunderstanding of the RFS program, the law does not in fact guarantee the consumption of any particular volume of renewable fuels in any year. As EPA has previously explained, if the amount of gasoline and diesel supplied for US consumption is less than the amount EPA expected to be demanded when setting the annual RFS standards, the volumes specified in the law are not required. Rather than mandate the production of, or guarantee the use of, any particular volumes of renewable fuels, the law limits the supply of gasoline and diesel fuel for US consumption by the amount of renewable fuels consumed in US transportation fuels. This basic construct was true under the Energy Policy Act of 2005 and the RFS1 regulations. Congress ratified this construct in Energy Independence and Security Act of 2007 (EISA) and it remains true under the RFS2 regulations.

Against that background, it is entirely reasonable for Congress to provide EPA authority to adjust the standards to address the problems that would arise due to an inability to consume the volumes of renewable fuels specified in EISA. Absent an EPA adjustment of the standards using the general waiver authority, the inability to consume sufficient renewable fuels will result in an inadequate domestic supply of gasoline and diesel fuel. It is inconceivable that Congress would not authorize EPA to make adjustments to the standards to avoid the potentially disastrous implications of limiting gasoline and diesel supplies. EPA's interpretation is entirely reasonable and consistent with the structure of the law.

EPA's overall philosophy of the RFS – recognizing that cellulosic and advanced should be favored over general renewable -- is entirely consistent with the structure of the law. The structure of the law is that cellulosic displaces advanced, which in turn displaces general renewable fuel. This results in the greatest greenhouse gas reduction benefits achievable, particularly since all, or practically all, general renewable fuel is entirely exempt from EISA's greenhouse gas emission reduction requirements. It is clearly consistent with the statute's goals to increase the cellulosic and advanced mandate pools while reducing the general renewable category.

EPA Has No Authority to Increase the Stringency of the Biomass-Based Diesel Standard Before 2017

In the previous proposal for the 2014 RFS standards, EPA correctly proposed to maintain the biomass-based diesel volume at 1.28 billion gallons for 2014 and 2015. Now, however, EPA has proposed to increase the biomass-based diesel mandates for 2014, 2015, 2016 and 2017. EPA has no authority to increase the biomass-based diesel volumes before at least 2017 at this point. The provision limiting EPA's authority to increase the stringency of the biomass-based diesel standard is clear. EPA must follow the clear intent of Congress:

> The Administrator shall promulgate rules establishing the applicable volumes under this clause no later than 14 months before the first year for which such applicable volume will apply.

The 14 month lead time requirement serves an important purpose. This provision applies to years where the volumes are not listed in the statute and therefore neither producers nor anyone else in the supply chain knows what the requirement will be. The purpose of the 14 month lead time requirement is to provide all parties in the supply chain the opportunity to plan their compliance and make investments, if necessary.

We note also that it is inappropriate for EPA to think that there is no harm to obligated parties because the overall number of RINs from biodiesel consumption in 2014 exceeded 1.28 billion gallons, or that the biodiesel consumption in 2015 and 2016 may exceed 1.28 billion gallons. The RFS puts obligations on specific obligated parties, not the industry as a whole. Thus, although there apparently will be excess biodiesel consumed in 2014-2016 versus the 1.28 billion gallon mandate, to meet the advanced and general renewable mandates, this does not mean that all obligated parties have sufficient biomass-based diesel RINs to meet the increased biomass-based diesel standards. Obligated parties that have justifiably relied on the law may be harmed by EPA's decision to increase the biomass-based diesel mandates for 2014-2016.

EPA is Correct to not Attempt to Drain the RIN Bank

EPA correctly determined that it would not be appropriate to attempt to set the standards for 2014-2016 such that obligated parties would have to drain their banked RINs to maintain compliance. As EPA explained in the preamble, maintaining an adequate RIN bank provides important flexibility to maintain compliance in the event of unforeseen events.

The RFS Reset

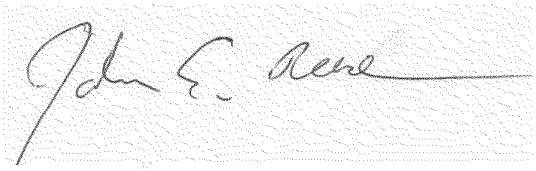
Uncertainty in the targets for cellulosic biofuels post 2022 will have an adverse impact on the ability of project sponsors to raise funding. The upcoming reset of the RFS mandates provides an opportunity to increase certainty to 2022 and beyond. Upon waiving any particular RFS mandate category by 50 percent in any single year or 20 percent in any two consecutive years,

EPA is required to conduct a rulemaking to adjust the overall schedule of the RFS mandates through 2022. EPA tripped the 50% trigger for the cellulosic category in 2010. Now, if EPA finalizes the volumes as proposed, the 20% trigger will be tripped for both the advanced and general renewable categories. This opens the pathway to reset all of the mandate volumes. EPA should move forward with this rulemaking expeditiously to provide certainty for investors in cellulosic biofuels by setting the cellulosic volumes through 2022 and beyond at realistically achievable levels, while adjusting the advanced and general renewable categories in such a way that the greenhouse gas emission benefits of the program are maximized while at the same time ensuring that the overall mandates are consistent with the capabilities of infrastructure and vehicles. We look forward to working with the Agency on the reset rulemaking.

* * *

We appreciate this opportunity to comment on EPA's proposed 2014-2016 Renewable Fuel Standards and 2017 Biomass-Based Diesel Volumes. If you should have any questions concerning these comments, please feel free to contact me at 713.230.5147 or John.Reese@Shell.com.

Sincerely,



John E. Reese
Downstream Policy & Advocacy Mgr., Americas

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EPA Proposes Renewable Fuel Standards for 2014, 2015, and 2016, and the Biomass-Based Diesel Volume for 2017

Under the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) is required to set the annual standards for the Renewable Fuel Standard (RFS) program for each year. This regulatory action proposes to establish the annual percentage standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuels that apply to all gasoline and diesel produced or imported in years 2014, 2015, and 2016. EPA is also proposing the applicable volume of biomass-based diesel that will be required in 2017.

The Clean Air Act provides EPA with the authority to reduce the volume requirements from their statutory targets under certain conditions, and we are proposing to use these authorities in this action. EPA has evaluated the availability of qualifying renewable fuels and factors that in some cases constrain the supply of those fuels to the vehicles that can consume them. EPA has also considered the ability of the market to respond to the applicable standards by producing changes in production, infrastructure, and relative pricing to boost the use of renewable fuels.

Based on these and other considerations, EPA is proposing volumes which, while below the volumes originally set by Congress, would increase renewable fuel use in the U.S. above historical levels and provide for steady growth over time. In particular, the proposed volumes would ensure continued growth in advanced biofuels, which have a lower greenhouse gas emissions profile than conventional biofuels. EPA is also proposing to increase the required volume of biomass-based diesel in 2015, 2016, and 2017 while maintaining the opportunity for growth in other advanced biofuels that is needed over the long term.

Congress developed the renewable fuels program in an effort to reduce greenhouse gas emissions and expand the nation's renewable fuels sector, while reducing reliance on foreign oil. Biofuels are an important component in the Administration's efforts to enhance energy security and address climate change.

EPA is seeking comment and any new data to inform setting the final volume standards, and will hold a public hearing on June 25, 2015, in Kansas City, Kansas.

EPA intends to take final action on this proposal by November 30, 2015, which will return the Agency to the program's statutory timeline for issuing RFS annual rules.

Overview

Due to constraints in the fuel market to accommodate increasing volumes of ethanol, along with limits on the availability of non-ethanol renewable fuels, the volume targets specified by Congress in the Clean Air Act for 2014, 2015 and 2016 cannot be achieved. However, EPA recognizes that the statutory volume targets were intended to be ambitious; Congress set targets that envisioned growth at a pace that far exceeded historical growth rates. Congress clearly intended the RFS program to incentivize changes that would be unlikely to occur absent the RFS program. Thus while EPA is proposing to use the tools provided by Congress to waive the annual volumes below the statutory levels, we are proposing standards that are directionally consistent with Congress' clear goal of increasing renewable fuel

production and use over time. The proposed volumes would require significant growth in renewable fuel production and use over historical levels. EPA believes the proposed standards to be ambitious but within reach of a responsive marketplace.

There are two different authorities in the statute that permit EPA to reduce volumes of advanced biofuel and total renewable fuel below the volumes specified in the statute. When the Agency lowers the applicable volume of cellulosic biofuel below the volume specified in the CAA, we also have the authority to reduce the applicable volumes of advanced biofuel and total renewable fuel by the same or a lesser amount. The Agency can also reduce the applicable volumes of any renewable fuel under the CAA general waiver authority under certain conditions, including where there is "inadequate domestic supply." This proposal uses a combination of these two authorities to reduce volumes of both advanced biofuel and total renewable fuel to address two important constraints:

- Limitations in the volume of ethanol that can be consumed given practical constraints on the supply of higher ethanol blends to the vehicles that can use them

- Limitations in the ability of the industry to produce sufficient volumes of qualifying renewable fuel, particularly non-ethanol fuels

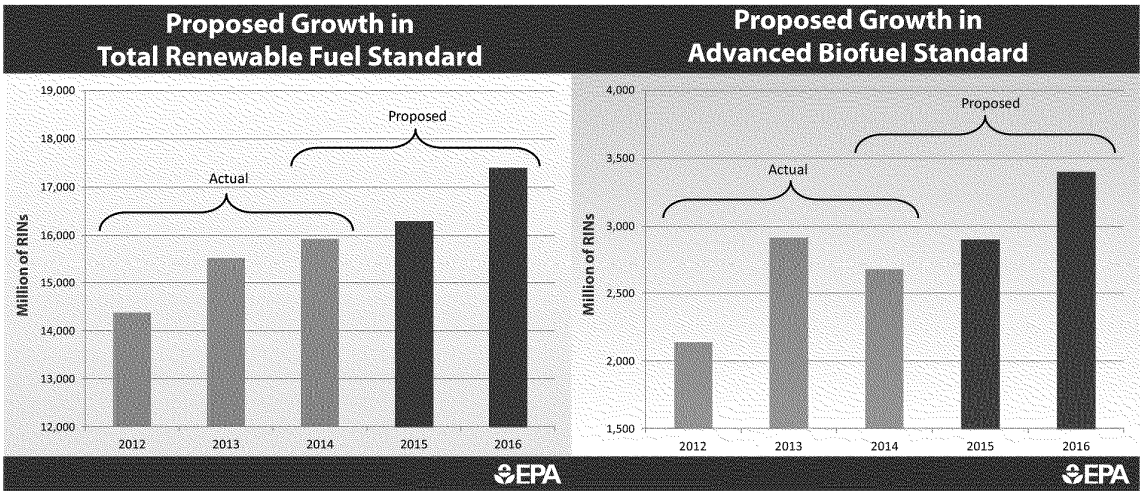
EPA is proposing to set the renewable fuel standards for 2014 at the levels that were actually produced and used as transportation fuel, heating oil or jet fuel in the contiguous U.S. and Hawaii. For 2015 and 2016, EPA is proposing ambitious increases in both advanced biofuel and total renewable fuel in comparison to 2014 levels. This proposed rulemaking also provides an evaluation of the expected volumes of cellulosic biofuel for 2015 and 2016, and proposes annual increases in the required volume of biomass-based diesel for 2015, 2016, and 2017. The volumes used to determine the proposed percentage standards are shown in Table 1.

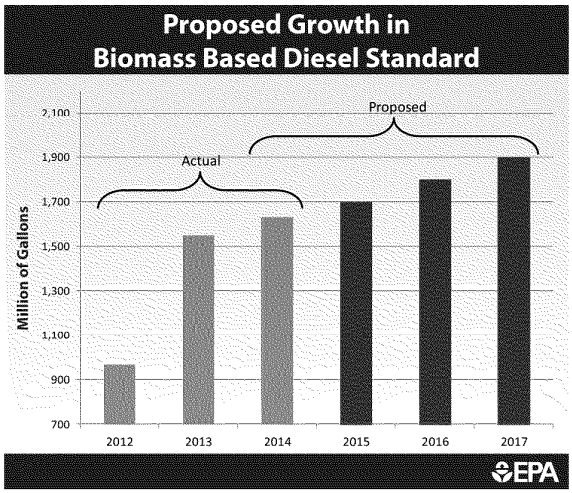
Table 1
Volumes Used to Determine the Proposed Percentage Standards[a]

	2014	2015	2016	2017
Cellulosic biofuel	33 mill gal	106 mill gal	206 mill gal	n/a
Biomass-based diesel	1.63 bill gal	1.70 bill gal	1.80 bill gal	1.90 bill gal
Advanced biofuel	2.68 bill gal	2.90 bill gal	3.40 bill gal	n/a
Total renewable fuels	15.93 bill gal	16.30 bill gal	17.40 bill gal	n/a

[a]All volumes are ethanol-equivalent, except for biomass-based diesel which is actual.

These proposed volumes would allow volumes of conventional (non-advanced) renewable fuel of up to 13.25, 13.40, and 14.00 billion gallons to be used to satisfy the total renewable fuel requirements for years 2014, 2015, and 2016, respectively. The charts below demonstrate that the proposed standards would represent significant growth over recent historical levels.





Four separate percentage standards are required under the RFS program, corresponding to the four separate volume requirements shown in Table 1. The percentage standards represent the ratio of renewable fuel volume to non-renewable gasoline and diesel volume. Thus, in 2016 about 10% of all transportation fuel used would be from renewable sources. The proposed standards are shown in Table 2.

Table 2
Proposed Percentage Standards

	2014	2015	2016
Cellulosic biofuel	0.019%	0.059%	0.114%
Biomass-based diesel	1.42%	1.41%	1.49%
Advanced biofuel	1.52%	1.61%	1.88%
Total renewable fuels	9.02%	9.04%	9.63%

Once the proposal is published in the Federal Register, it will be open for public comment until July 27, 2015.

For More Information

For more information on this proposal, please visit the RFS website at:
www.epa.gov/otaq/fuels/renewablefuels

Notice of Proposed Rulemaking for Annual Renewable Fuel Standards: 2014, 2015, and 2016

(and 2017 For Biomass-Based Diesel)

May 29, 2015

Background

- The RFS program was first put into place (RFS1) by EPA in 2007 in response to Clean Air Act amendments in EPAct 2005, and then was revised by EPA in 2010 (RFS2) in response to EISA 2007

- The Clean Air Act lays out a schedule of volumes for cellulosic biofuel, advanced biofuel and total renewable fuel to be achieved through 2022, and biomass-based diesel (BBD) through 2012. EPA is to set volume requirements for years after those in the statute based on review of a number of factors.

- The statute enables EPA to waive the statutory volumes for various reasons, including inadequate domestic supply

- The Act requires EPA to set annual percentage standards that apply to refiners and importers and are designed to achieve renewable fuel volume requirements

- EPA proposed annual standards for 2014 in November 2013, but they were never finalized

Proposal Overview

- This proposal includes proposed standards for 2014, 2015, and 2016 for all biofuel categories under the RFS program
- EPA will finalize the rule by November 30, 2015, which returns us to statutory timetable for issuing volume rules
- The proposal also includes the 2017 volume for BBD in this package since it must be set 14 months ahead of 2017 (i.e., November 2015)
- The proposal also addresses requests from States and others for a waiver of 2014 volumes
- The proposal places strong emphasis on the intent of Congress to push volumes, while recognizing limitations that exist on the supply of sufficient renewable fuels to consumers

General Approach to Proposed Standards

- 2014 would be set at the volumes actually supplied
  - Supply = domestic production + imports - exports

EMTS
(EPA's electronic RIN-tracking system)

EIA

- 2015 volumes would include a projection of growth, but standards take into account the fact that the year is partially over

- 2016 will be the first year for which proposal would be able to drive growth on the statutory timeline
  - 2016 proposed standards would provide for substantial growth over historical volumes

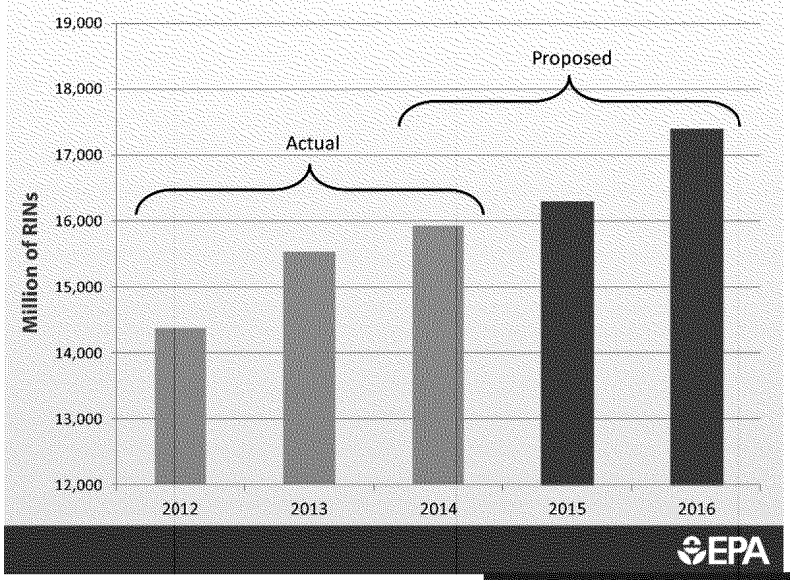
Proposed Volumes

	2014	2015	2016	2017
Cellulosic biofuel	33	106	206	
Biomass-based diesel	1,630	1,700	1,800	1,900
Advanced biofuel	2,680	2,900	3,400	
Total renewable fuel	15,930	16,300	17,400	
Conventional renewable fuel (total standard - advanced standard)	13,250	13,400	14,000	

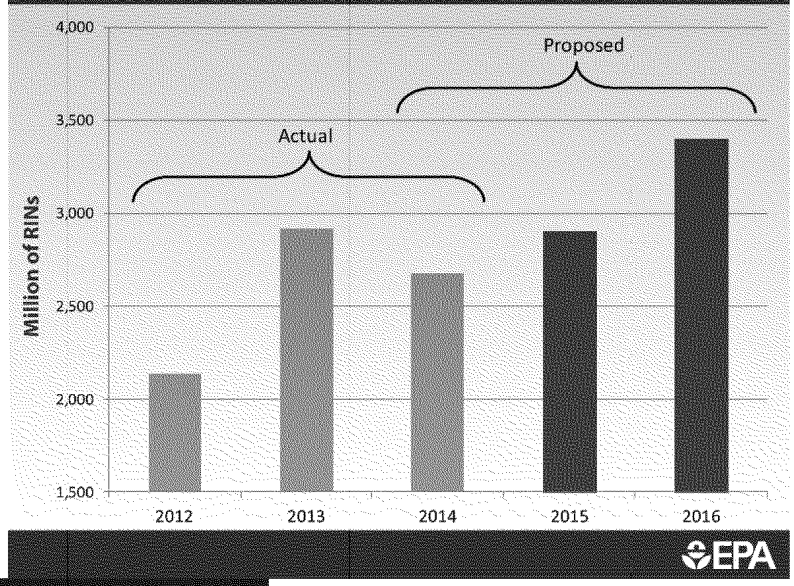
All volumes are ethanol-equivalent, except for biomass-based diesel which is biodiesel-equivalent

Trends Over Time

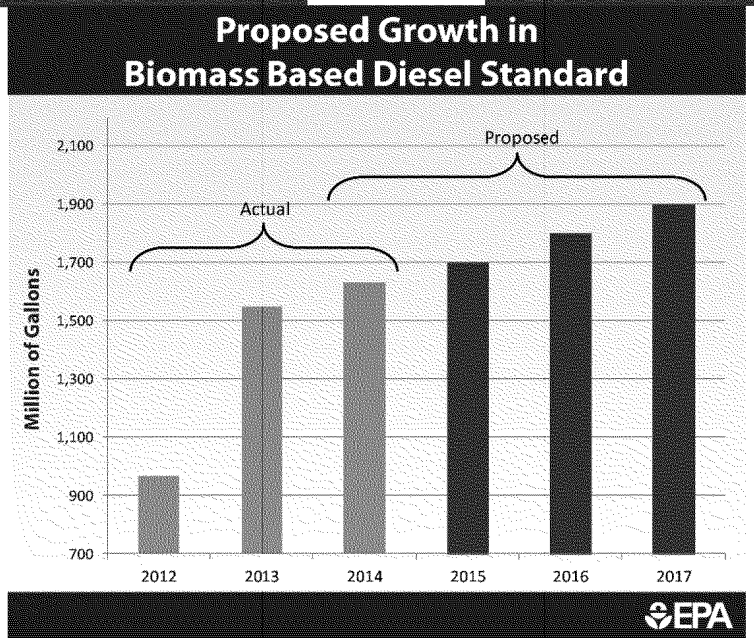
Proposed Growth in Total Renewable Fuel Standard



Proposed Growth in Advanced Biofuel Standard



Proposed Growth in Biomass Based Diesel Standard



Legal Approach

- Cellulosic Biofuel
  - Statutory requirement for "projected volume available"
  - January 2012 court directive for a "neutral aim at accuracy"
- Biomass-based diesel
  - Statutory requirement that we analyze a set of factors
  - Consideration of the contribution of BBD to advanced biofuels and the benefits of providing incentives for both biodiesel and other advanced
- Advanced biofuel and total renewable fuel
  - Combination of the cellulosic waiver authority and the general waiver authority
    - We use the same approach for all three years
  - Interpreting "supply" under the general waiver authority to include supply to the vehicles and engines that can consume fuel
    - Constraints on supply thus include any infrastructure issues that could impact the actual use of renewable fuel
  - Statutory volumes for total and advanced cannot be met on statutory timeline
    - Original Congressional targets were too ambitious

Advanced Biofuel and Total Renewable Fuel

- Proposal places strong emphasis on the intent of Congress to push volumes
- The proposed standards are market-forcing and rely on the ability of the market to respond to the standards we set to drive growth
  - Proposed standards would push beyond BAU growth
- In setting the proposed standard EPA considered 2 factors:
  - Constraints imposed by the E10 blendwall and limitations in production and import capability of advanced biofuels
  - The ability of the market to respond to ambitious standards
- The proposed standards ensure growth in advanced, total, and conventional biofuels
  - Total = Conventional + Advanced
- The market will determine the precise mix of biofuels which are used to meet the standards

Advanced Biofuel and Total Renewable Fuel

- We have used 2014 as our baseline in determining the growth that can be achieved in 2015 and 2016
  - 2015: Given that the standards will be set after a large portion of 2015 is over, we have projected moderate growth of ~400 mill gal over the 2014 volume
  - 2016: We believe that growth of an additional 1.1 bill gal is possible over the 2015 volume, though it is very ambitious
    - If all growth not required to be biomass-based diesel were ethanol, it would require more than 1 bill gal of E85

- We are proposing to reduce both advanced and total together by the same amount using both the cellulosic and general waiver authorities, and then reduce total further using just the general waiver authority
  - We use the same approach for all three years

- In response to a market-forcing total standard, we anticipate growth in
  - E85 volumes, or
  - Non-ethanol volumes (mostly biodiesel) or
  - Some combination of the two

How Far Above the E10 Blendwall Will The 2016 Standards Push?

- This depends on how the market responds to the standards we set
- Could be as high as 1,260 mill gal of E85, or as low as ~100 mill gal of E85 (actual 2014 volume)
  - Equivalent to a poolwide ethanol content of between 10.05% and 10.59%
- We make no predictions about which is more likely, but show various scenarios in the proposal for how the market might respond

Biomass-Based Diesel

- EPA is required to consider a list of statutory factors
- The proposed volume biodiesel standard principally reflects two considerations:
  - Intent to provide certainty to the biodiesel industry which is currently the predominant contributor to the advanced biofuel standard
  - Support for growth in other advanced biofuels (e.g., naphtha, renewable gasoline, jet fuel)
- The volume requirements provide for guaranteed ongoing growth in BBD while allowing for growth in other advanced biofuels if they can compete

Cellulosic Biofuel

- As for all previous annual standard-setting rulemakings, our projections of cellulosic biofuel are based upon facility-specific analyses
- Methodology
  - Establish a range for each company based on actual past production (low end) and a 6 month ramp-up to full production (high end)
  - Divide companies into two groups based on whether or not they have had consistent commercial production in the past
  - Project volumes for each group using 25th percentile for those who have not had consistent commercial production in the past and 50th percentile for those who have
- For each year, the majority of the fuel is expected to come from CNG/LNG derived from biogas (remainder is primarily ethanol)
  - About 98 out of 106 mill gal in 2015
  - About 170 out of 206 mill gal in 2016

Benefits of Proposed Volumes

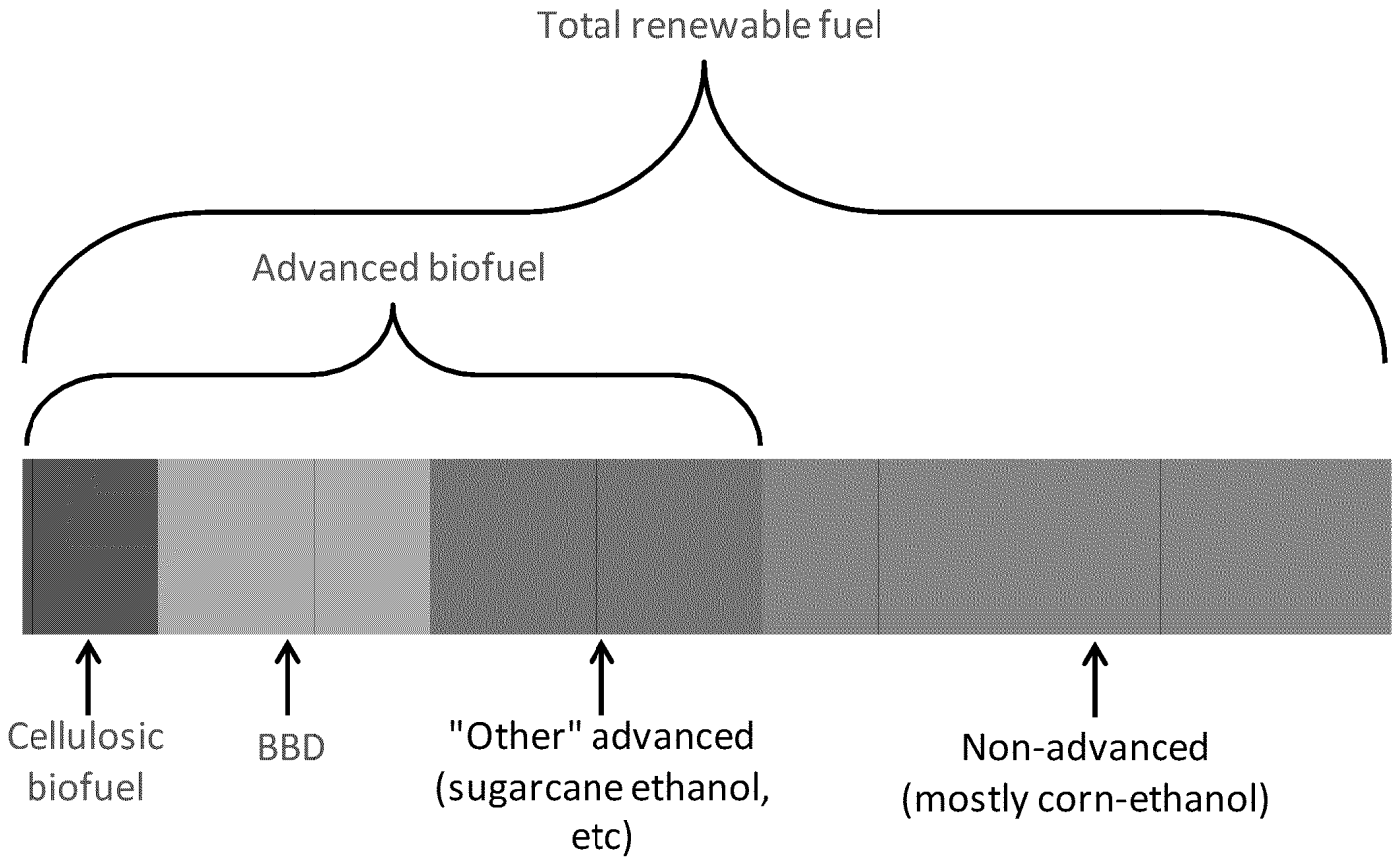
- Growth in advanced and total volumes push the market while also recognizing that the statutory volumes are not achievable on the Congressional timeline
- Conventional biofuel volumes continue to grow toward the 15 bill gal-limit imposed by Congress
- The biomass-based diesel standard guarantees growth in biodiesel industry while still allowing room for the growth in other advanced biofuels needed in the future
- The cellulosic standard recognizes the new role of cellulosic biogas, thereby substantially increasing requirements over past years

Next steps

- Public hearing: June 25, Kansas City KS
- Comment period will end on July 27, 2015
- Final rule by November 30, 2015

Appendix

Interaction Between Standards



Statutory Volumes

	Cellulosic biofuel	Biomass-based diesel	Advanced biofuel	Other advanced (advanced minus cellulosic minus BBD)	Total renewable fuel	"Conventional" (total renewable minus advanced)
2009	na	0.5	0.6	-0.15	11.1	10.5
2010	0.1	0.65	0.95	-0.125	12.95	12
2011	0.25	0.8	1.35	-0.10	13.95	12.6
2012	0.5	1	2	0	15.2	13.2
2013	1	a	2.75	0.25	16.55	13.8
2014	1.75	a	3.75	0.5	18.15	14.4
2015	3	a	5.5	1.0	20.5	15
2016	4.25	a	7.25	1.5	22.25	15
2017	5.5	a	9	2.0	24	15
2018	7	a	11	2.5	26	15
2019	8.5	a	13	3.0	28	15
2020	10.5	a	15	3.0	30	15
2021	13.5	a	18	3.0	33	15
2022	16	a	21	3.5	36	15

a: statute sets 1b gal minimum, but EPA may raise requirement

Prepared Remarks for Michael McAdams
Advanced Bioeconomy Leadership Conference Policy Outlook
March 11, 2015

Doug, ladies and gentleman, good morning. It is always good to be back with you at the ABLC.

I could have never imagined when I first spoke at this conference seven years ago that I would be here today forced to say that 2008 was a better year. Sadly, it's true.

Today, members of the Advanced Biofuels Association are facing incredible challenges, including diminishing capital markets, an uncertain tax code, and a patch-quilt of state laws and federal regulations. Unfortunately, the Renewable Fuels Standard (RFS) – the very tool that was created to foster our industry – has become one of the greatest obstacles to continued development of the advanced and cellulosic biofuel industry due to inconsistent and poor implementation.

Remember back to 2007 when the RFS amendments were debated and signed into law by an overwhelming bipartisan majority. Some members of Congress wanted to expand energy options to enhance our national security. Others were motivated by the promise of lower carbon fuels, while still other lawmakers were focused on economic opportunity for new jobs in rural America. But there was near unanimous agreement that the *ultimate prize* of the RFS, was to foster the development of the

advanced and cellulosic biofuel manufacturers who would use non-food feedstocks to produce next-generation fuels. In fact, the authors optimistically called for an additional 21 billion gallons by 2022, well beyond 15 billion gallons of corn ethanol.

Eight years after its passage, it is easy to see that the RFS may be working for some, but it is only minimally helpful to advance the promise and potential of next-generation renewable fuels. We need to acknowledge the simple fact: that the RFS is not equally helpful to all sectors of the biofuels industry.

Let's look at last year's performance to demonstrate this point, that one size does not fit all. According to the EPA EMTS system, the corn ethanol industry produced 14.3 billion gallons in 2014, while the biomass-based diesel pool – made up primarily of biodiesel – produced around 1.7 billion gallons. Those are billions with a "B" and healthy numbers. What do corn ethanol and biodiesel have in common? They use established technology, process traditional food feedstocks and have already built more production capacity than called for under the statute.

As for the non-biodiesel advanced and cellulosic sectors, last year's production was under 180 million gallons. That's better than nothing but not nearly enough. The current RFS simply doesn't work as well for companies trying to move cutting-edge technology from the demonstration plant to commercial scale – which necessarily involves

raising capital to build new production facilities. It's not working for three primary reasons.

First, is the inverse relationship between policy uncertainty and my members' ability to raise investment capital. Repeatedly missing deadlines to set annual RFS requirements and reducing those requirements below statutory levels has created significant uncertainty, and that ambiguity causes financing for advanced and cellulosic companies to evaporate.

Second, the calendar is now also working against us. Even if your company has a business plan that works when a barrel of oil costs $50 and at today's RIN prices, capital markets now question whether the support provided by the RFS will exist after 2022. There's a reason most of us take out 30-year mortgages, but today's RFS uncertainty would have lenders requiring advanced and cellulosic companies to look at paying it off in seven years.

Another concern is the lack of a market for companies actually making cellulosic fuel. Let's say your company somehow manages to overcome the obstacles I've highlighted and produces cellulosic biofuel. Perversely, with EPA's current implementation, it is usually a much better deal for obligated parties to purchase a refundable waiver credit from the EPA than it is to buy your actual gallons with the cellulosic credit. That's why 33 million gallons of cellulosic biofuel RINs were left

sitting on the sidelines in 2014, because it was cheaper for oil companies to buy EPA cellulosic waiver credits.

After working with EPA since 2009 to attempt to get pathways approved, feedstocks approved, annual volume requirements released on time, only to frequently be told from the agency that they do not have sufficient legal authority to get the job done, it has become clear that statutory changes need to be made to the RFS. And that is why the members of ABFA are now calling on Congress to pass legislative fixes that will solve these problems.

- First, we need a minimum RIN value for cellulosic fuels that will provide enough certainty and stability for our members to build facilities and commercialize their innovative products. And because we are competing against fossil fuels produced at cash cost, using already built and fully depreciated facilities, cellulosic RIN values should also be indexed to the price of oil, providing more support when petroleum costs $50 per barrel and less at $100 per barrel.

- Second, Congress should show their support for advanced and cellulosic fuels by making it clear the program extends beyond 2022 to provide sufficient time to develop this industry. Again, we can't pay off the new plant in seven years.

- And lastly, we need to remove The loop hole that allows the oil industry to opt out from buying a cellulosic gallon with its credit and in lieu buying a waiver credit. The RFS should encourage production of all available advanced and cellulosic biofuels. But just as important, oil companies must be required to purchase what is produced so Americans can benefit from consuming these cleaner fuels.

In order to achieve such changes, the RFS needs to be amended legislatively. So I am announcing today that ABFA, at the instruction of our members, will actively seek to reform the program. We call on Congress, which has studied these issues for two years and held numerous hearings, to step up and pass the fixes I have outlined. We believe that if Congress enacts these changes, then the investment community will have the certainty necessary to finance continued development of the advanced and cellulosic industry.

As for the current mess setting annual volume requirements, we have advocated for over a year now to simply utilize the actual production numbers off the EMTS system. Reset the start times from November 30th to mid-February when the final numbers are available. Doing so will eliminate the difficulty in setting the RVO numbers each year and turns the function into a simple administrative function rather than a long, drawn-out debate which would require a long rule making process.

Most of you got into this business because we want to leave the world in better shape for the next generation – a mission that is as critical as ever.

By 2050, global population is expected to grow to 9 billion. The demand for liquid transportation fuels will increase because there's no other good option for powering the airplanes, heavy-duty trucks, diesel equipment and ocean-going vessels that will be necessary to move people and deliver freight. Next generation biofuels are still a critical part of the solution to finding more sustainable, lower carbon alternatives to provide the energy our world needs. At a minimum, they are a smart insurance policy.

If you are committed to fulfilling this mission, and if you believe like I do that advanced and cellulosic biofuels are still poised to flourish in the right environment, then I ask you to join us and work with the Advanced Biofuels Association to reform and strengthen the RFS so it can deliver the promise of next-generation renewable fuels.

Again, it is a pleasure to be with you today, and I look forward to your questions.